

Amendments to the Specification

Please amend the paragraph beginning on page 4, line 28, as follows:

The monitoring step can include ascertaining whether a detected temperature has exceeded a specified value or has exceeded a specified gradient indicative of the temperature anomaly. For example, the action-initiating step can ~~comprises~~: comprise: triggering an alarm whenever a detected temperature gradient is at least 0.04 °C/s, triggering a system calibration whenever a detected temperature gradient is at least 0.08 °C/s, and triggering a halt of exposure whenever a detected temperature gradient is at least 0.1 °C/s.

Please amend the paragraph beginning on page 11, line 28, as follows:

If the temperature anomaly is not corrected by actions initiated in step 135 (e.g., if the detected temperature change increases to 0.08 °C/s or greater (step 141), (step 141)), then a different alarm from the alarm activated in step 133 is activated by the warning device 39 (step 143). In response, the controller 31 initiates one or more routines that perform calibration of the microlithography apparatus according to the temperature signals actually being received from the temperature-monitoring device 35 (step 145). During calibration a charged particle beam is passed through a mark pattern on the reticle 10 such that the beam downstream of the mark pattern scans corresponding marks on the substrate 23. Excessive positional shifts of the reticle 10 and substrate 23 relative to each other caused by the temperature anomaly, compared to normal operating conditions, are detected and corrected as required. For example, changes in focus or demagnification ratio, for example, caused by the temperature anomaly are corrected. Alternatively or in addition, the sensitivity of one or more lenses and/or deflectors in the CPB optical system is adjusted. As a result of this corrective action, the respective monitored components are controllably manipulated to perform within specified tolerances despite the temperature change. If the temperature anomaly is corrected, then the alarm is terminated, the process returns to the normal loop of steps 121 and 123, and microlithographic exposure is performed while maintaining the various temperatures within their specified tolerances.

Please amend the paragraph beginning on page 12, line 23, as follows:

If the temperature anomaly is not corrected by the actions in step 145 (e.g., if the detected temperature change increases to 0.1 °C/s or greater, ~~step 151~~) (step 151), then a different alarm from the alarm triggered in step 143 is activated by the warning device 39 (step 153). In this instance, the temperature-monitoring device 35 sends a signal to the controller 31 that causes an interruption of exposure (step 155). Typically, during the interruption, the stages 11, 24 are stopped and the illumination beam is blanked. Also, a recordation in the data log of the microlithography system is triggered, stating that the chip being exposed at the time is abnormal (step 157). In response, calibrations and the like are performed to restore operating conditions to within respective specifications so that microlithographic exposure can be resumed (step 159). If the anomaly is corrected, then the alarm ceases, the process returns to the normal loop of steps 121 and 123, and exposure of the next chip or wafer is performed while maintaining the various temperatures within respective specified tolerances.

Please amend the paragraph beginning on page 13, line 23, as follows:

Steps S4-S13 also provide representative details of wafer processing. Step S4 is an oxidation step for oxidizing the surface of a wafer. Step S5 involves chemical vapor deposition (CVD) for forming an insulating film on the wafer surface. Step S6 is an electrode-forming step for forming electrodes on the wafer (typically by vapor deposition). Step S7 is an ion-implantation step for implanting ions (e.g., dopant ions) into the wafer. Step S8 involves application of a resist (exposure-sensitive material) to the wafer. Step S9 involves microlithographically exposing the resist using a charged particle beam to as to imprint the resist with the reticle pattern of the reticle produced in step S2. In step S9, a CPB microlithography apparatus as described above can be used. Step S10 involves microlithographically exposing the resist using optical microlithography. This step also can be performed using a reticle produced in step S2 ~~can be used~~. Step S11 involves developing the exposed resist on the wafer. Step S12 involves etching the wafer to remove material from areas where developed resist is absent. Step S13 involves resist separation, in which remaining resist on the wafer is removed after the etching step. By repeating steps S4-S13 as required, circuit patterns as defined by successive reticles are formed superposedly on the wafer.